Winter Resources

WSDOT maintenance crews use a variety of resources and methods to accomplish their goal of keeping the roadways safe and drivable during the winter months. To maintain efficiency and keep costs down, these resources are used where they are proven to be most beneficial during inclement weather.

Communications tower at Southwest Region headquarters building in Vancouver

Southwest Region communications control room in Vancouver

Southwest Region Traffic Management Center in Vancouver

Weather Resources

The technology for treating snow and ice on the roads has grown vastly in the past decade, allowing WSDOT to be more proactive and flexible in its approach to these winter weather events. Prevention starts before the snow and ice hits the roadway.

Armed with knowledge about weather forecasts, our maintenance teams can better predict where snow and ice will accumulate. This information is then used to initiate a preventative response by applying anti-icing agents to these high priority areas before the snow falls and bonds to the road, and before cold temperatures turn the roadway surface into ice.

Weather Information Systems

- Highway Advisory Radio Systems (HARS) broadcast traffic and weather conditions to motorists in the immediate area. Southwest Region HARS stations are located on I-5 in Ridgefield, Castle Rock and Napavine and on US 97 in Maryhill.
- Variable Message Signs are electronic message boards that advise travelers of changing speed limits, traffic accidents, and road conditions ahead. There are 18 Variable Message Signs in the Southwest Region located on I-5, US 12, US 97, SR 14, and SR 500.
- WSDOT currently owns 65 Road Weather Information Systems Environmental Sensor Stations and has access to 6 additional sites. These systems record real-time weather information used for forecasting and operations, including air temperature, road surface temperatures, humidity, wind speed, and, in some cases, the percent of anti-icing solution on the roadways.
- The Southwest Region's Traffic Management Center (TMC) is located in the Vancouver headquarters building, which is shared with the Washington State Patrol's District 5 office. The TMC operates 24-hours a day, seven days a week, and uses HARS, Variable Message Signs, radio communications, and traffic cameras located throughout the region to ensure effective and timely response to incidents, and to help keep highways clear and safe for public use. They also help promote the safety of field personnel by updating them with immediate road and weather conditions at all hours of the day.

Looking for travel information?

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For more information about the Snow and Ice Program, contact:

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Washington State Department of Transportation

Winter 2006-2007
Southwest Region

Snow and Ice Program

Snow blowing on Mount St. Helens

Southwest Region Maintenance services its fleet

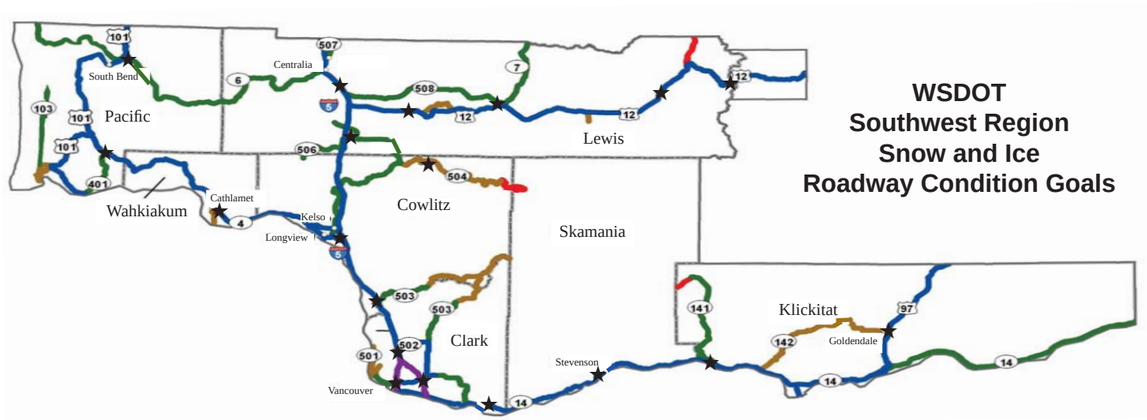
Educating the public

What is the Snow and Ice Program?

The Snow and Ice Program is WSDOT's comprehensive strategy to maintain the state highways for winter driving. The Southwest Region Snow and Ice Plan aids in preventing snow and ice buildup on the roadway and provides for the removal of snow and ice when winter weather arrives.

Which roads are cleared first?

The Southwest Region's highways are ranked in their priority for snow and ice removal. WSDOT uses the most current statistics to determine this priority, including traffic volumes, number of steep hills, sharp curves, intersections, ramps, or other potentially dangerous areas. These statistics then determine what resources, equipment, and supplies are necessary on a particular highway. The ultimate goal is to provide a bare and wet highway surface on all state highways in the region as soon as possible after a storm. The priority listed below is the order in which WSDOT deploys resources.



Equipment and Methods

The Southwest Region maintenance program uses a variety of equipment to combat snow and ice on the highways. WSDOT selects equipment from its fleet based on the most effective and efficient way to either prevent snow and ice from forming, to clear the roads of snow and ice accumulation, or as a last resort to increase traction to slick roads by applying sand.

Liquid Spray Truck

These trucks are used to apply a liquid anti-icing chemical to the roadway.

When the road is bare, applying a liquid anti-icing chemical can prevent ice from forming.

Once snow falls, applying liquid anti-icing chemicals to the roadway helps break up the snow and ice, making removal much easier.

Snow Plow

The Southwest Region uses two types of snow plows to remove snow and ice from the roadway: The truck on the left has a “Bat Wing” front plow and a wing plow mounted on its right side. The two-way dump box is able to dump forward or backwards.

The truck on the right has a front plow blade and a hopper sander box that is used for applying solid chemicals and if necessary sand.

Snow Blower

The Kodiak snow blower shown in both pictures travels at 1 ½ to 3 mph. At this speed, the blower can throw the snow well over 100 feet. Snow blowers are used to clear deep snow on the mountain passes, and along the highway where the snow builds up and must be thrown clear of obstructions.

Tandem Plowing

Tandem plowing is used when plowing can only be done in one direction, such as on multi-lane divided highways, or freeways.

Tandem plowing uses 2 or more plows working in succession at speeds close to 35 mph.

BE SMART - BE SAFE - BE PATIENT - DON’T PASS

When you see snow plows and trucks applying chemicals or sand to the road, be patient and stay back. Remember that your safety is most important. Never pass a snow plow when it’s engaged in snow removal operations. Plow operators will pull over to the side of the road and let you pass when it’s safe to do so. In most instances you should not pass a snow plow on its right side since that is where the snow is thrown. The vehicle may also have a wing plow that extends out from its right side, and may not be easily visible at night or in heavy snow conditions. Be smart, be patient, and don’t pass unless there is a safe place to do so and you have a clear view of what is ahead.

Chemicals vs. Sand

Winter drivers will not see sand on the highways as they have in the past. WSDOT has reduced its use of sand and implemented a program that includes liquid and solid chemical treatments to control snow and ice, and to improve winter roadway conditions. Last year, Southwest Region used only 36 cubic yards of sand in comparison with the 16,000 cubic yards used in the previous winter.

WSDOT began using these chemicals in the early 1990’s. The program continues to improve each year as new chemicals and new application techniques are introduced, and our experience grows.

Reducing the use of sand has several benefits:

Better highway conditions - Experience has shown that chemical treatments are more effective than sand in keeping the roadways safe during winter conditions. Where sand requires multiple treatments to be effective because it’s easily blown to the shoulder of the road, chemical applications remain on the roadway longer and can be used for multiple purposes. Chemical anti-icing and de-icing treatments applied to the roadway prevent ice from forming, and when applied to the snow, they help break up compact snow and ice for easier removal with snow plows.

Cleaner environment - Reducing the use of sand contributes to cleaner air and water by preventing dust concentrations from forming. When sand treatments are necessary, WSDOT applies sand in accordance to the federal Clean Air Act standards.

Cost savings - Each spring maintenance crews must sweep up the leftover sand from the shoulders of the road, as well as re-stripe any lane markings that were eroded by the sand. Increased use of chemicals, instead of sand, has dramatically reduced spring clean up and re-striping costs, saving taxpayers money.

However, WSDOT will continue to use sand under certain winter conditions where other alternatives aren’t as effective. For example, sand is primarily used when temperatures drop below 15 degrees Farenheit because today’s chemicals are not as effective at such low temperatures.

Chemical Treatments

The Southwest Region uses solid and liquid calcium chloride or magnesium chloride for anti-icing, deicing, and pre-wetting treatments. Rock salt and liquid salt brine mixed with anti-corrosion additives are also being used in some areas.

Anti-icing - Liquid calcium chloride or magnesium choloride is applied to a bare road before a storm to prevent a hard bond of ice from forming, to reduce the amount of snow buildup, and to accelerate the snow and ice break up after a storm.

De-icing - Liquid or solid calcium chloride or magnesium chloride is applied to remove a thin layer of snow or ice already on the road. It can also be very effective for melting and preventing black ice and freezing rain from adhering to the road.

Pre-wetting - Wetting solid chemical material and sand with calcium chloride causes them to stick to snow better. Keeping solids on the road is nearly impossible in some circumstances, especially in very cold weather with high-

Winter Tip: Keeping your vehicle clean during the winter keeps snow and road grime from caking onto your vehicle’s headlights and taillights, making it easier for you to see and be seen. It also will protect your vehicle from corrosion caused by the anti-icing chemicals. Anti-icing chemicals have an anti-corrosion additive, which reduces the amount of corrosion potential significantly. Calcium chloride is proven to be over 70 percent less corrosive than salt, however, no anti-icer is 100 percent corrosion-free. By washing your vehicle during the winter months, you can prevent corrosion from wearing on your vehicle. All the chemicals are water-soluble, so rinse your vehicle thoroughly before applying soap. If towing aluminum boats or trailers, be sure to wash them as well.